5.5.P24

Petrogenesis of Tahir (Beypazari) granitoids: Ankara- Turkey

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Tahir represents part of the Beypazari granitoids and is located approximately 50 km south of Beypazari (Ankara). It represents granitoid and young cover units within the Sakarya Continent. Tahir granitoids are the main study subject. There are 4 subunits, Kirbasi monzonite, Tahir monzogranite, Tacettin granite and Moman alkali feldspar granite. The latter is the youngest unit, cutting the other 3 subunits as an aplitic dyke. Kirbasi monzonite outcrops at the outer zone and forms the darker unit of Tahir granitoids. Kirbasi monzonite composition changes gradually to quartz monzonite towards the inner part of the pluton. Tahir monzogranite has a gradual contact with the Kirbasi quartz monzonite and crops out at the north, east and south of the study area

Excluding Moman alkali feldspar, granite mafic enclaves are observed within the other 3 subunits as angular and elliptical in shape and changing from mm to approximately 20 cm in size. They can be divided genetically into two types according to field relationships, textural features and mineralogical composition. The first type has igneous texture, sharp contact with host rock rimmed by fine crystalline mafic minerals and represents the abundant enclave type within the Tahir granitoids. These enclaves mostly have subophitic texture, diorite, quartz diorite and monzodiorite. Ocellar quartz, acicular apatite, poiclitic feldspars and blade-shaped biotite are the most characteristic features of the first type of enclave, which may represent the magma mixing/mingling enclaves in origin. The second type of the enclave has metamorphic texture with clear lineation, sharp contact with host rock and are mostly observed at the northwest part of Kirbasi and Tahir exposures as angular to sub-angular in shape. These types of enclave have hornfels composition at the contact with the host as a product of contact metamorphism and have amphibolite composition at the core as a product of high temperature and middle pressure metamorphism. The textural features and mineral composition of the second type may suggest a fragment of metapelitic rocks caught by Tahir granitoid magma as xenolithic enclaves.

Whole rock composition reveals that Kirbasi monzonite, Tahir monzogranite and Tacettin granite are subalkaline magmatic rocks and calcalkaline in nature. Tahir granitoids are enriched in Light-REE and LIL with respect to High-REE and HFS elements. Tectonic discrimination diagrams of Tahir granitoid suggest a product of plate convergence and probably belong to Volcanic Arc Granitoid (VAG). The data reveal that the Tahir granitoid may originate from the continental crust and undergone fractional crystallization forming the subunits of the pluton.

5.5.P25

Petrogenesis of the Khorinsky volkano-plutonic structure (Transbaikalia)

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Khorinsky volkano-plutonic structure locates in the central part large Mongolian-Transbaikalian alkaline granitoids belt , which extends for more than on 2500 km. Formation of the Belt occurred in two stages: span 280-270 Ma and 230-210 Ma. The Khorinsky structure occupies the area about 3000 км^2. At a modern level of an erosive cut the volcanic rocks were kept in insignificant quantity, basically the structure is combined by seynites and granites. The plutonic stage is subdivided into three suites: alkaline-feldspar, peralkaline and seynite-granite. Age of the Khorinsky structure is 280 ± 5 Ma, i.e. it was generated at the first stage of formation of the Mongolian-Transbaikalian belt. Formation of the Khorinsky structure was preceded by formation regional dyke belt which is very close to age гранитоидов - 288 ± 5 Ma. Comparison of isotope and geochemical characteristics of the composing structure rocks are come to conclusion about presence of various sources for magmas of different compositions. The assumption is stated, that under formed volkano-plutonic structure there were independent magmatic chambers which settled down on different depths in a crust and, probably, in lithosphere mantle. The magmatic material acting from these chambers, has caused formation of a complicated complex of volcanic, plutonic and dyke rocks.

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